

Conference or Workshop Item - Abstract

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International Databases for Parameters used in Risk Assessment Tools to Demonstrate Environmental Protection on Wildlife

Copplestone D¹, Beresford N.A². and Real A³.

¹ Biological and Environmental Sciences, Faculty of Natural Science, University of Stirling, Stirling, FK9 4LA, Scotland

² Research Centre for Energy, Environment and Technology (CIEMAT), Avenida Complutense 22, 28040 Madrid, Spain

³ NERC Centre for Ecology & Hydrology, CEH Lancaster, Lancaster Environment Centre, Lancaster, LA1 4AP, United Kingdom

Risk assessment methods for assessing the doses to wildlife are being increasingly requested as environmental protection becomes embedded in national and international requirements. To make such assessments there is a need to:

1. estimate transfer of radionuclides to organisms;
2. calculate the dose to the organism of interest (dosimetry)
3. compare the dose (rates) to known radiation effects on wildlife.

The estimation of transfer of radionuclides to organisms is often based on the use of the concentration ratio which is the activity concentration in the organism of interest divided by the the activity concentration in an appropriate media (e.g. soil, water, air). A compilation of concentration ratios has been generated and made available through an international online wildlife transfer database. The online database is available at <http://www.wildlifetransferdatabase.org/>.

The available dose assessment tools take the transfer data, the size and shape of the organism and it's location in the ecosystem and calculates the dose rate. These calculations are described in the documentation associated with the different tools. Once you have estimated the dose or dose rate, determining the likely impact of any radionuclides requires an analysis of the possible effects of ionising radiation on the organisms of interest. To facilitate this, the FREDERICA radiation effects database has been developed to provide an online search of the known effects of ionising radiation on wildlife, taken from papers in the scientific peer reviewed literature.

This paper describes the derivation of the wildlife transfer database and radiation effects literature compilations, highlighting where the data have come from, where data gaps exist and the applications for the data. The paper will also describe the quality assurance work that has been conducted before the data are accepted into the databases.

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